

**AMENDMENTS TO THE CLAIMS:**

This listing of claims will replace all prior versions and listings of claims in the application.

**COMPLETE LISTING OF THE CLAIMS:**

Claims 1-3 : (Canceled)

Claim 4 : (New) A phase error detector for generating a phase correction signal to correct a phase difference between a reference frequency of a voltage-controlled oscillator and a carrier frequency of a received signal which is received by a quadrature-amplitude modulated (QAM) receiver, the received signal having in-phase components and QAM components in a plurality of decision regions, the detector comprising: a plurality of different algorithms for execution by the detector; the detector selecting, for each decision region, one of the algorithms to generate the phase correction signal by different algorithms for all of the decision regions.